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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/052,861

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EXAMINER

FORD, JOHN K

ART UNIT

PAPER NUMBER

3753

DATE MAILED: 11/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

Applicant(s)

Examiner

Art Unit

10/052861

Getchel et al

FORD

3743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9-2-03
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

Applicants' response of September 2, 2003 (Paper No. 5) has been studied carefully. Applicants have amended the apparatus claims 1-5 and 11-14 to include the previously unclaimed limitation that the refrigeration system is controlled by the temperature of the temperature control fluid and the temperature of the chuck. The Examiner sees no original disclosure to support this limitation. More specifically there is no disclosure that supports this limitation. More specifically there is no disclosure that supports that T1 and either of T4 or T6 are used to control the refrigeration system. T1 is used to control electric heaters, and at times to control valve SV2 to bypass coolant past the refrigeration system (which refrigeration system includes compressor 140, condenser 130, TEV 136, evaporator 134 and EPR 138). It appears that temperatures T4 and T6 are used primarily to actuate coolant control valves (SV2 and SV3 and SV4), which bypass the refrigeration system and/or chuck, but do not, in effect, control the refrigeration system. They also are used to actuate heaters H1 and H2, which are not part of the refrigeration system.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-5 and 11-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably

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convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Examiner's comments, immediately above, are incorporated here by reference.

Please point out where, in the original disclosure, the refrigeration system (i.e. compressor 140 etc.) is controlled by the signals from sensor T1 and either one of sensors T4 or T6. There doesn't appear to be any original disclosure for this. In Figure 1 the refrigeration system is either ON or OFF when the system is ON or OFF (see page 16, lines 11-18) and in Figure 2 T7 alone is used to control refrigeration capacity as disclosed on page 19, lines 15-17. This latter control scheme is very similar to that disclosed by Oswalt. Nowhere in applicants' disclosure is it fairly disclosed that the refrigeration system uses the input from the temperature control fluid sensor and the chuck temperature sensor, as claimed in claims 1 and 11.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of EP 0411916, (Figure 3) and Oswalt et al. (USP 4,850,201).

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EP '916, Figure 3, teaches an electrically heated (7), as disclosed in col. 7, lines 28-32, chuck (5) cooled by a constant temperature water circulator (13). No details of the constant temperature water circulator (13) are disclosed except temperature sensor 21, no doubt because it forms no pertinent part of the EP '916 invention. Two temperature sensors 9 and 21 are disclosed for controlling chuck temperature.

Oswalt teaches a precision temperature control water chiller, which would have been obvious to use in place of element 13 of EP'916 (Fig. 3) to attain the precision temperatures needed for EP '916 to operate effectively. The box labeled "LOAD" in Oswalt would replace element 13 in EP '916. Oswalt explicitly monitors return coolant temperature at 29 and supply coolant temperature at 18.

Note a hot gas bypass is shown at 9 in Oswalt. Applicant's claimed "first heat exchanger" is ^{either of heat exchangers 3 or 2 in Oswalt and the "second heat exchanger" is} 6 in Oswalt. Regarding claims 12 and 16, see element 23 of EP'916.

Regarding claims 13 and 17 see heater 3 of Oswalt. Regarding claims 14 and 18, note that lines 14, 16 and 27 each bypass the heater 3 of Oswalt.

Claims 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claims 11-18 above, and further in view of Kawamura (USP 5,892,207)

Kawamura teaches in col. 3, lines 19-29, using temperature sensors 58 and 60 (sensing chuck temperature and the temperature control fluid temperature ^{respectively} to calculate the temperature of the wafer- ^{temperature}

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supporting surface 62 and comparing that calculated temperature to the desired set-point and using controller 44 to control the temperature conditioning system on that basis.

To have used both the chuck temperature and the conditioning fluid temperature in calculating an actual temperature of the wafer supporting surface in EP'916/Oswalt and controlling the temperature conditioning equipment on that basis would have been obvious to one of ordinary skill to attain improved control.

Claims 1 – 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of the prior art as applied to claim 11-18 above, and further in view of Marshall (USP 2,466,460.).

Marshall discloses a chiller unit 6 ^{in Figure 1 corresponding in function to Oswalt's unit 6}. In Marshall, element 3 corresponds to Oswalt's "LOAD". In Figure 1, Marshall teaches a bypass conduit 19 for the temperature control fluid, which permits it to bypass the chiller 6. The bypass is connected between the return line 8 and supply line 7 (just upstream of pump 9).

To have provided Oswalt with a bypass and condenser pressure controlled valve between return line 13 and a supply line between tank 5 and pump 7 as taught by Marshall would have been obvious to advantageously obtain a more constant load on the compressor based on condenser pressure controlling a bypass valve.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of the prior art as applied to claims 11-18 above, and further in view of Newton (3,237,415).

The rejection claims 11-18 are incorporated here by reference. Newton teaches a controlled bypass conduit (45, 47) at the discharge side of a return fluid pump 36 with a heat exchanger 60 in it. The bypass conduit bypasses chiller 44 and allows heat exchanger 60 to cool the fluid when weather conditions permit. To have added such a heat exchanger and bypass between the supply and return conduits of Oswalt to permit ambient cooling would have been obvious to advantageously save on energy costs (i.e., similar to applicant's heat exchanger 135).

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of the prior art as applied to claims 11-18 above, above, and further in view of Finnemore (2,182,174).

Finnemore discloses a chiller bypass 24, which is temperature controlled by valve 14 to bypass the chiller when the load on the system has been met (as determined by temperature sensor 26).

To have added such a chiller bypass to Oswalt to avoid any unnecessary system operation when the load was fully satisfied would have been obvious. Such a modification would advantageously conserve energy.

Claims 1-10 rejected under 35 U.S.C. 103(a) as being unpatentable over any of the prior art as applied to claims 11-18 above, and further in view of Tyron 92,917,287) or Padden (4,071,078).

Tyron at 18, 26 and Padden at 92, 90 teach temperature controlled bypasses of the chiller. To have added such bypasses to Oswalt to bypass the chiller when it was not necessary for cooling would have been obvious to conserve on energy.

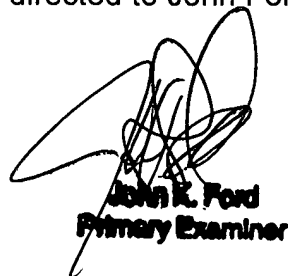
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to John Ford at telephone number 703-308-*2636*.



John K. Ford
Primary Examiner